AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs 0005 - 0007 with the following amended paragraphs:

[0005] In Laser Scanning Microscopy, the Non-Descanned Detection method (NDD) is frequently employed. This method is especially important, if highly scattering ~~probes~~ samples are to be examined or large penetration ranges are to be achieved, and only very closely adjacent mirrors with limited light conductivity are available in the LSM scan head for the detection. In that case, the detection of the excitation to be modulated takes place externally in non-descanned manner in the vicinity of ~~an aperture~~ a slit diaphragm.

[0006] Usually, the excitation in the UV/VIS range is generated through a two-photon process with pulsed IR radiation. An example of this is disclosed in U.S. Pat. No. 5,034,613. The total emitted fluorescence radiation is then assigned to the excitation in the confocal volume of the focus, and can be detected, possibly after scattering several times in the ~~probe~~sample, in the reflected light channel or the transmitted light channel. For that, high light conductivity is necessary in the detection channel.

[0007] For this reason, a basic requirement in optimized layouts lies in the effective and ~~probe-near~~ near-sample detection of the fluorescence radiation, in order to maximize the effective field of vision as the virtual source of scattered light. The accessibility in these regions is however frequently limited due to the interfaces of the microscope stand itself, as well as due to the supplementary devices used, like pipettes and electrodes. A significant boundary condition is

given by the detector itself, which exhibits not only spectral but also positional and angle-dependent sensitivities.

Please replace paragraph 0011 with the following amended paragraph:

[0011] The present invention may be implemented in a Laser Scanning Microscope with a non-descanned detection and/or observation beam path, illumination and detection beam paths and a direction of detection. The Laser Scanning Microscope includes a beam splitter positioned for separation of the illumination and detection beam paths. At least one optical arrangement is positioned in the direction of detection for regular transmission of a detected light. A second optical arrangement is provided between the beam splitter and the optical arrangement for reducing the diameter of a beam bundle ~~of a beam~~ to be imaged.

Please replace paragraphs 0014 - 0016 with the following amended paragraphs:

[0014] Figure 1 explains the effect of the arrangement for a beam path. Shown is a part of the beam path in a Laser Scanning Microscope (see, for instance U.S. Pat. No. 6,167,173 which is incorporated by reference herein as if reproduced herein), from a scanner ~~aperture~~ slit diaphragm SP to a scan objective SO for transmission of the illumination light beam, an illumination tube lens ~~5~~ 4 and a beam splitter 1 (main dichroic beam splitter for separating the excitation and the detection beam) in the direction of the objective (only the objective ~~aperture~~ slit diaphragm 3 is shown here).

[0015] A non-descanned detection beam path passes through the beam splitter 1 and a mirror 2 as well as a detection tube lens [[4]]5 in the direction of the detection DE, whereby another beam splitter ST 3 can be provided for masking the illumination beam path. On insertion of ~~a convex lens~~an optical arrangement 6 at the reflector 1 immediately after the reflection, the normally used diameter of the reflector 2 is reduced, thus enabling greater transparency for the scattered light. The optical arrangement 6 can be a convex lens or a diffractive optical element (DOE). One can see that, in particular, the normally used diameter before the illumination tube lens 4 is distinctly greater compared to that of detection tube lens 5, which are each at the same distance from the objective, and thus directly illustrates the derived benefit. In the example shown, the aperture at the border area can be increased by about 15%, corresponding to about 30% increase in the brightness.

[0016] The ~~convex lens~~optical arrangement 6 can be inserted with advantage immediately on the reflector at the reflector housing, for instance, at an insertion slot, whereby the available slots for the insertion of the filters can also be used. It is advantageous if the ~~lens~~ optical arrangement 6 is also ~~replaceable~~ interchangeable or can be plugged in and out.